DAILY PHYSICAL ACTIVITY PATTERNS IN CANCER SURVIVORS: A PILOT STUDY

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ABSTRACT

Background: Low levels of physical activity are associated with low Quality of Life (QoL) and increased chances of morbidity and mortality. In cancer survivors these activity levels have been studied primarily by means of questionnaires, while objective information on actual daily activity levels and their distribution throughout the day is lacking. More insight in actual daily activity is needed to improve post cancer activity behavior advice.

Methods: Daily physical activity was measured with a MTx inertial 3D-motion tracker, for 5 consecutive days from 8 am to 8 pm in both cancer survivors (free from cancer, last treatment ≥ three months ago) and age- and gender-matched healthy controls. Group differences in activity level per day were tested using independent t-tests. In addition, group differences in distribution of activity over the day (morning, afternoon, evening) were analysed using mixed ANOVA. Since chemotherapy is known for affecting physical functioning and activity, associations between having received chemotherapy and objective activity level were explored with point-biserial correlations, and differences in activity patterns between groups (chemo/no chemo/controls) were analyzed separately.

Results: 18 cancer survivors (6 male; mean age 55.7±10.2 yrs) and 18 controls (6 male; mean age 55.2±8.2 yrs) were included. No significant difference was found in daily activity level between cancer survivors (1108±277 counts per minute (cpm)) and healthy controls (1223±304 cpm; p=.129). Also, distribution of physical activity over the day was not significantly different between survivors and controls (p=.191). However, a significant correlation was found between having received chemotherapy and objective daily activity (r=.586; p=.011). Further analysis revealed a trend for decreased activity level in survivors that received chemotherapy (978±195 cpm) compared to controls (1223±304 cpm) and survivors that did not receive chemotherapy (1313±300 cpm; p=.059). Again, no significant difference was found between groups (chemo/no chemo/controls) in distribution of activity over the day (p=.201).

Conclusions: The findings of this study suggest that especially cancer survivors who received chemotherapy as part of their treatment, have low physical activity levels. However, this study did not found support for a deviating daily activity pattern in cancer survivors compared to healthy controls. Since information on daily activity patterns is important for the development of new interventions to improve post cancer activity behavior, additional research is needed to determine if a larger study sample supports the findings of this pilot study.

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